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COUNTRY East Germany

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SUBJECT Goniometer Direction Finder Development at Funkwerk Koepenick

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DATE OF INFO.

SUPPLEMENT TO REPORT NO.

THIS IS UNEVALUATED INFORMATION

1. Development of a goniometer direction finder (Goniometerpeiler), which was carried out by Department TEE of Funkwerk Koepenick during
25X1 1952 under plan number K2-32, was taken over into the 1953 development program under plan number K3-40. The goniometer of the instrument could not be completely developed during 1952. When the project was carried over to 1953, it was placed under the scientific-technical supervision of Wilhelm Grimm, with Erler (fnu) as technician in charge. The following are the 1953 plan characteristics of the project:

Theme: Continuation of the development of a goniometer direction finder (100 to 3.5 MHz)

Key word: Goniometerpeiler

Technical Characteristics: The sensitivity of a normal receiver with a preset goniometer is not sufficient. Furthermore, development provides for the construction of a trial model with the following parts:

Cross frame, goniometer, direction finding input connection (Peileingangsschaltung), receiver with four ranges, power supply 24 Volt D.C., power supply 220 Volt A.C.

Cost: Total cost is to amount to 110,000 DME including 34,000 DME for 1952 and 23,000 DME for 1953.

Work schedule: Construction of a model and completion of its trial operation by the second quarter 1954.

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2. The research project (Studienentwurf) for the plan proposed for 1954 [redacted] 25X1 the development:

Goniometerpeiler: Frequency range- 100 to 2,500 kHz.

DF performance: smaller than 50 micro-Volt per meter at plus minus 1.5 kHz band width for one degree minimum width at 1,000 meter wave length A1 operation (at A1-A3 operation: 50 to 80 micro-Volt per meter).

Intermediate frequency: 70 kHz.

3. Development progress made in 1953 is given in the following [redacted] 25X1

25X1 a. [redacted]

25X1 The goniometer for the goniometer direction finder had not yet been entirely completed. Construction of the intermediate and low frequency parts was underway. Demodulator studies had made it clear that a cathode demodulator would only be of limited use. Another demodulator would probably be necessary. The suggestion stemming from Fussneger (fnu) of the Main Administration for Wireless Telecommunications to develop a capacity goniometer was accepted with reservation; Funkwerk Koepenick was trying to obtain new ideas about capacity goniometers from the available literature on these devices. It is known from earlier times that the use of capacity goniometers excludes the firm coupling of the antenna and, thus, good sensitivity.

25X1 b. [redacted]

Mechanical construction of the high-frequency preselection circuits, the mixer stage and of the first oscillator was underway. They were being mounted on a common chassis. The cross frame with the auxiliary antenna had been completed. The "Einschub" and the sense finding circuit were being worked on in the laboratory workshop. Funkwerk Koepenick needed a qualified precision mechanic for the completion of the first goniometer. Cooperation between the development chief and the mechanic was not satisfactory. An attempt was to be made to use for the further development of high frequency iron cores Manifer 1 instead of Sirufer 1, since the Mescho firm can deliver Manifer 1. The status of the work was as follows:

Development	30 percent
Designs	0 percent
Construction	0 percent
Trial	0 percent

25X1 c. [redacted]

Work on the goniometer could not proceed because the Funkwerk was short of a qualified mechanic. Five core samples had arrived from the Dralowid firm, Teltow; they were being processed and measured. The cross frame and its wiring had been completed.

25X1 d. [redacted]

One goniometer and one de-blurring variometer (Enttruebungsvariometer) had been completed and measured. The results were satisfactory. Dralowid delivered five core samples to be measured and evaluated. Funkwerk Koepenick notified that permeability as well as the quality and mechanical solidity of the devices was not sufficient.

25X1 e. [redacted]

Wiring of the goniometer input stage had been completed, and it was being tested. Measurements undertaken had indicated that the aerial "Ueberhoehung" was twenty percent less than that of the telegon direction finder. This result was to be expected because the Sirufer high-frequency iron used does not have quite the same permeability as the iron used in the telegon direction finder. This difference, however, was insignificant for the performance of the direction finder. De-blurring, sense finding and operational control functioned well. A goniometer with ten high-frequency cores (X8 11 a, diameter 50, length 20.5) delivered by Dralowid was under construction. The core material was easy to process. The homogeneity of the iron was good. Work on the receiver did not progress because one technician was absent.

25X1 f. [redacted]

A second goniometer was built with X8 11 a iron cores furnished by Dralowid. The permeability and the quality of the goniometer iron core coils did not quite measure up to the quality of the goniometer for the telegon direction finder. However, the goniometer with the iron core was considered usable. The homogeneity of the iron was excellent. The receiver was being rebuilt for new valves. Because of vacations, only one technician was available for some time.